Membership DB for ePIC

Status and Plans

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2024-07-03

Membership DB Requirements Summary

First Version Second Version

"...**The ePIC collaboration requires robust tools for managing its membership effectively.** These tools must allow the Collaboration Council, in conjunction with the Membership Committee, to add or remove new member institutions along with their respective representatives on the Collaboration Council. The Membership Committee, in coordination with institutional representatives, will be responsible for maintaining the information pertaining to the collaboration's members within a specific institution.

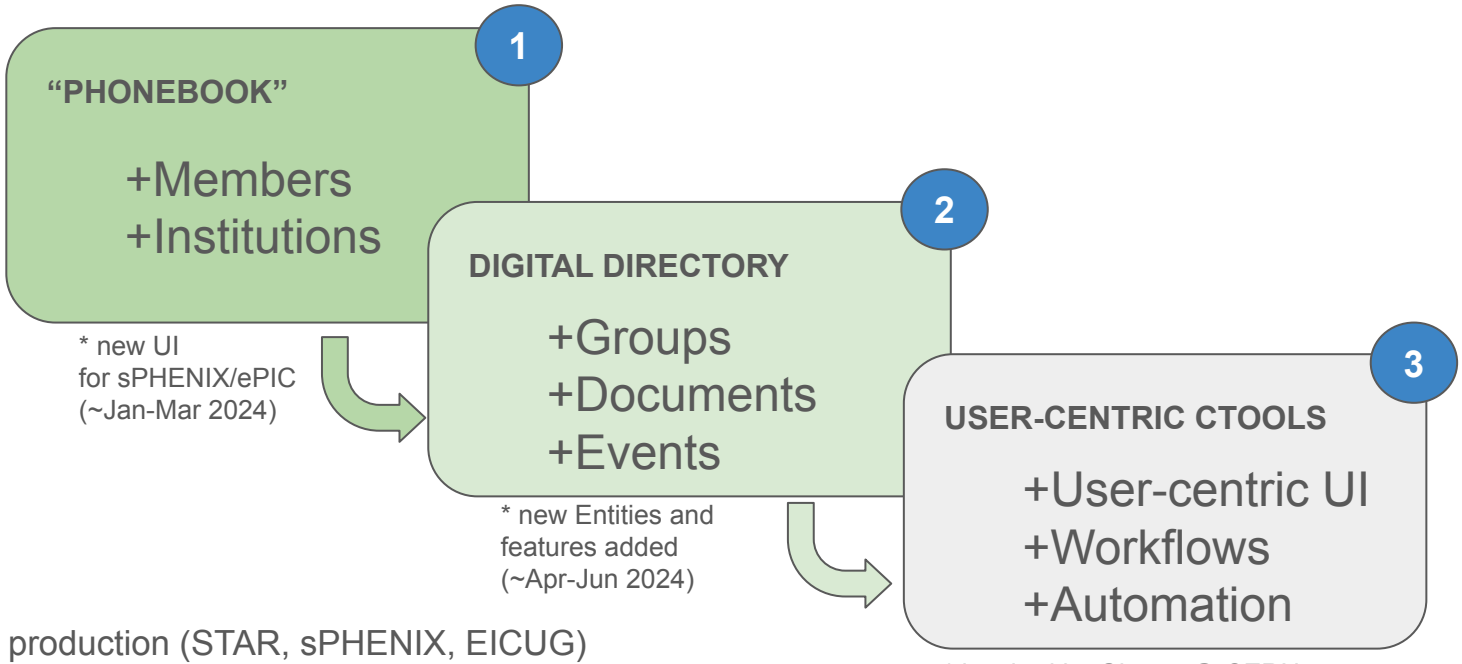
Accurate and up-to-date information about the collaboration's institutions and members is of paramount importance for facilitating collaborative work. Members must stay well-informed about ongoing projects and have a straightforward means of reaching out to one another for collaborative efforts. Equally essential is the management's ability to identify individuals involved in various working groups.

It is imperative that the selected tool and its setup affords the collaboration complete autonomy in managing its information, in accordance with the specifications outlined in the Collaboration Charter and the policies established by the Membership Committee.

The membership information will be used for approving plots, publications, and other collaboration document plots and determining authorship for publications. Therefore, it is vital that this information is easily accessible from other tools or seamlessly integrated into existing ones.

To address cybersecurity and privacy concerns, it is paramount that membership information remains protected and accessible solely for internal use within the collaboration…"

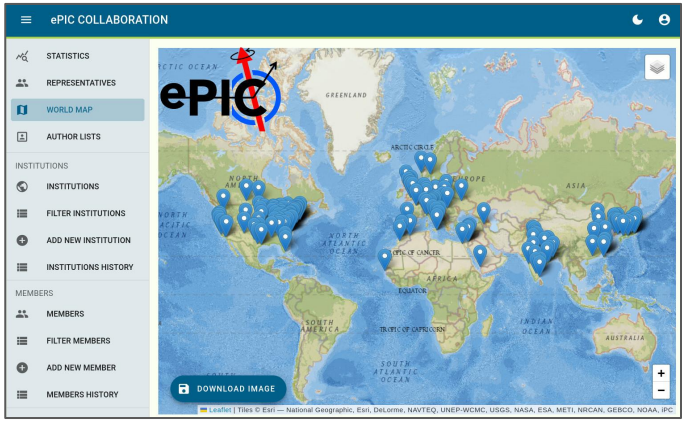
Membership DB: Development Path Overview

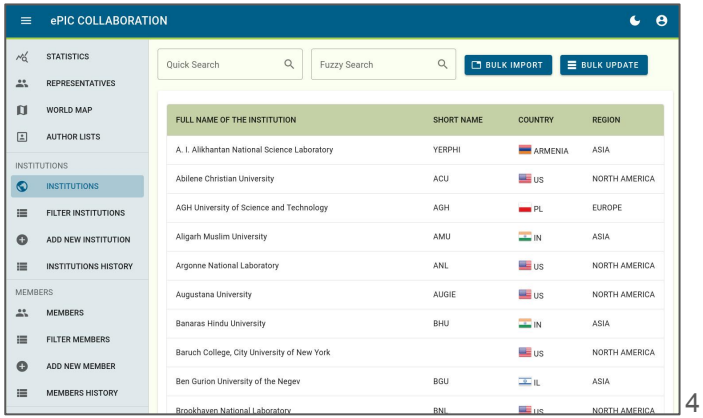


1. Service in production (STAR, sPHENIX, EICUG)
2. Recently developed modules for sPHENIX and ePIC
3. Ongoing development aka "coming soon"

Membership DB: Core Features

- Collaboration = Members + Institutions
  - Membership DB provides a convenient way of tracking Members and Institutions: Create / Read / Update / Deactivate.
  - preserves a history of changes for all records
  - generates author lists for a given date
  - Members are uniquely identified by ORCID, Institutions are uniquely identified by ROR ID.
- Service features:
  - manages Members and Institutions via the Entity-Attribute-Value model (EAV)
  - all phonebook fields are dynamic and are version-controlled (history of changes support). New fields could be configured on a fly, via the web interface, and are immediately available.
  - phonebook is a service: RESTful API and GraphQL API
    - clients: PhoneBook UI, Shift Signup, Online QA System, Disk Space allocators, Document Management System, etc.
    - trouble-free integration with dependent services





Service Integration: REST + GraphQL API

- Phonebook is a REST / GraphQL service:
  - all data is accessible via HTTP calls, JSON format
  - standard way of service integration, cross-platform, cross-language
  - no need to query “a” database or know the specific format of the data source
- GraphQL API:
  - modern replacement for REST
  - flexible, simplifies the integration process
  - allows to avoid overfetching => lower latency
  - all needed data fetched via a single request
  - supports data filtering

```
curl -s \
   --header "Content-Type: application/json" \
   --request POST \
   --url https://phonebook.sdcc.bnl.gov/graphql/ePIC/ \
   --data '{ "query": "query {
members{id,name_first,name_last,email,institution{id,name_full,name_short}} }", "variables": { "filters": [ { "field": "name_first", "op": "fuzzy", "val": "tomas" } ] } }'
```

GraphQL API: unix shell example

```
import requests
import json

url = "https://phonebook.sdcc.bnl.gov/graphql/ePIC/"
body = """
{
  members{ id, orcid_id, name_first, name_last, email
           institution{ id, ror_id, name_full, name_short }
  }
}
"""
response = requests.post(url=url, json={"query": body}).
if response.status_code == 200:
           print( json.dumps(response.json()) )
```

GraphQL API: Python example

GraphQL

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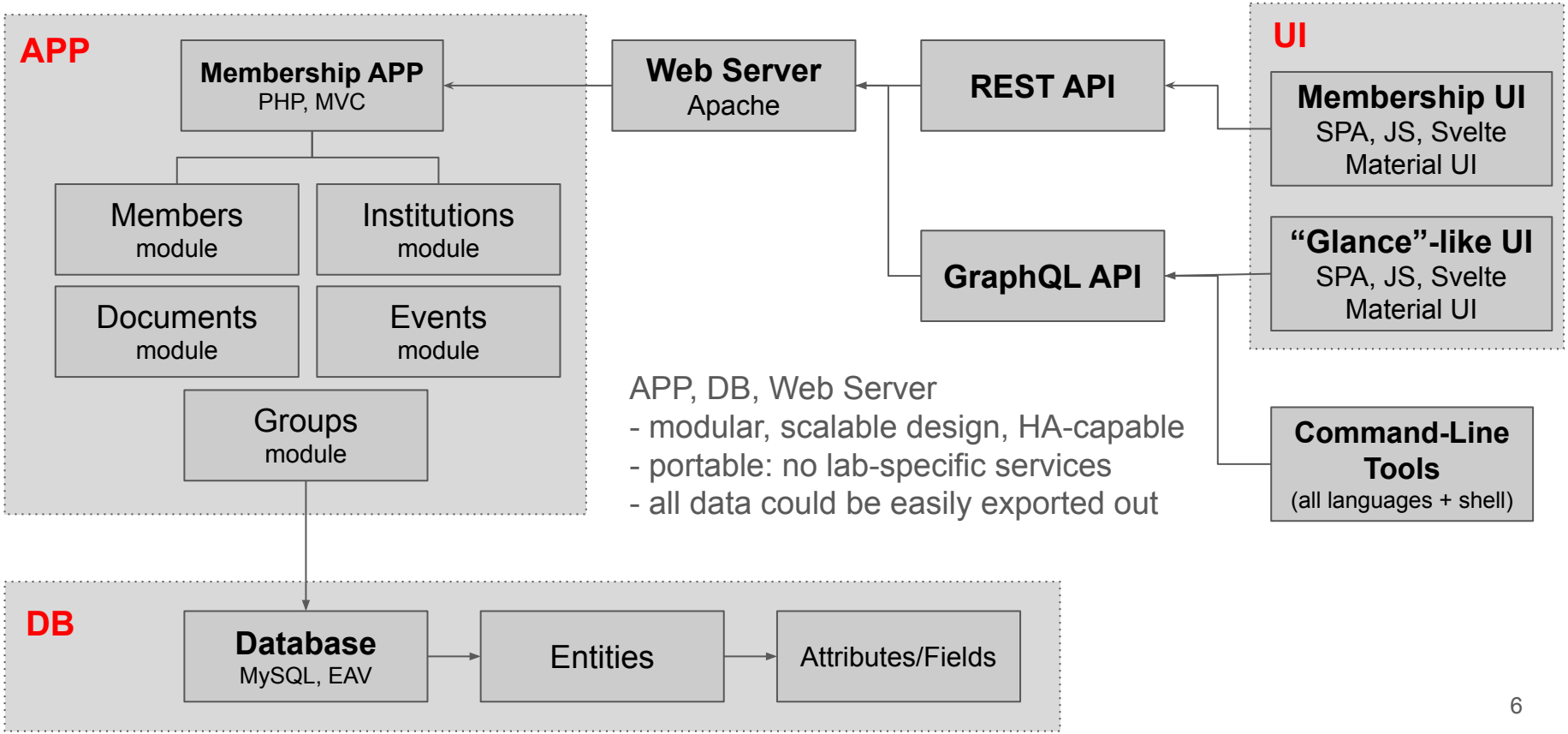
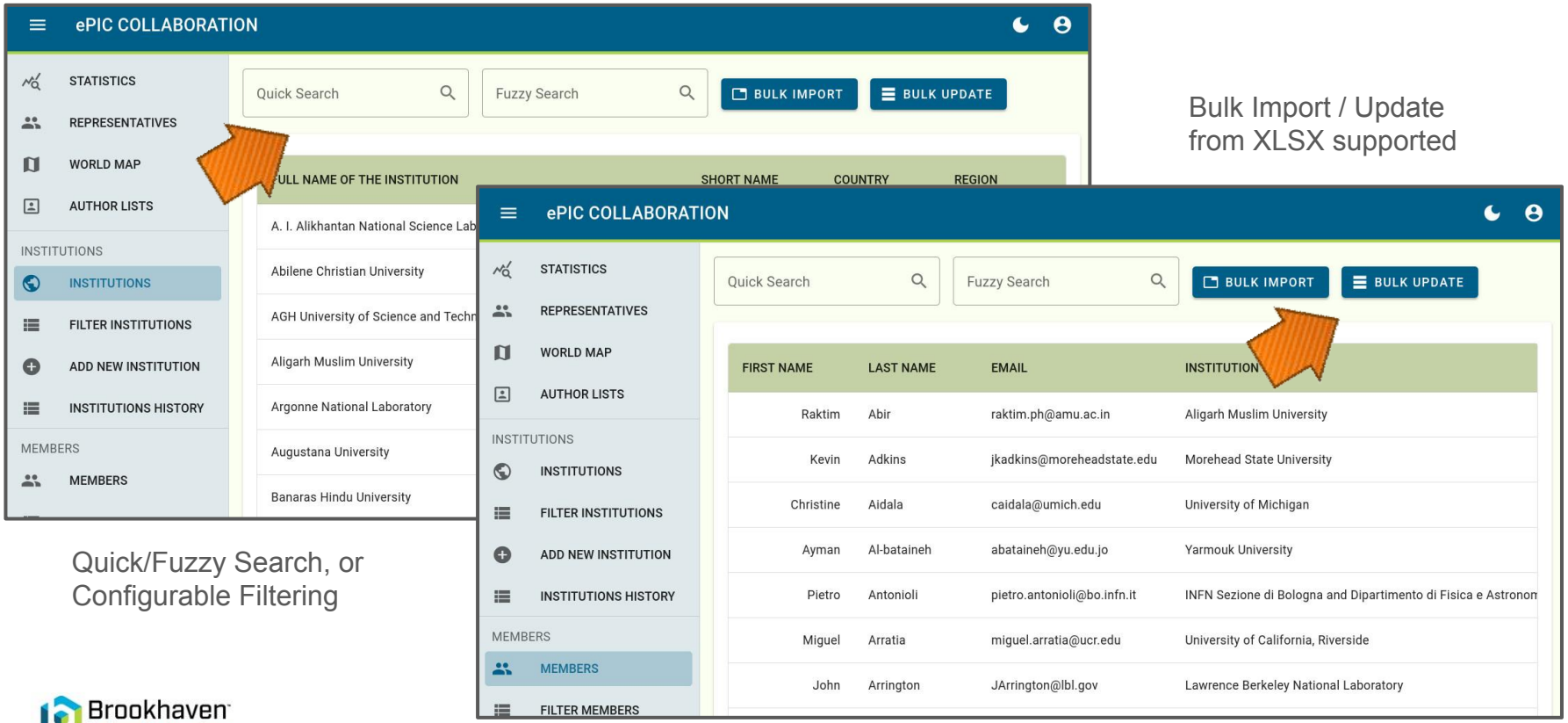
Membership DB: Implementation Details

https://github.com/dmarkh/epic_phonebook_mui MIT License



Manage Institutions and Members of ePIC online: browse, add, edit



Bulk Import / Update
from XLSX supported

Quick/Fuzzy Search, or
Configurable Filtering

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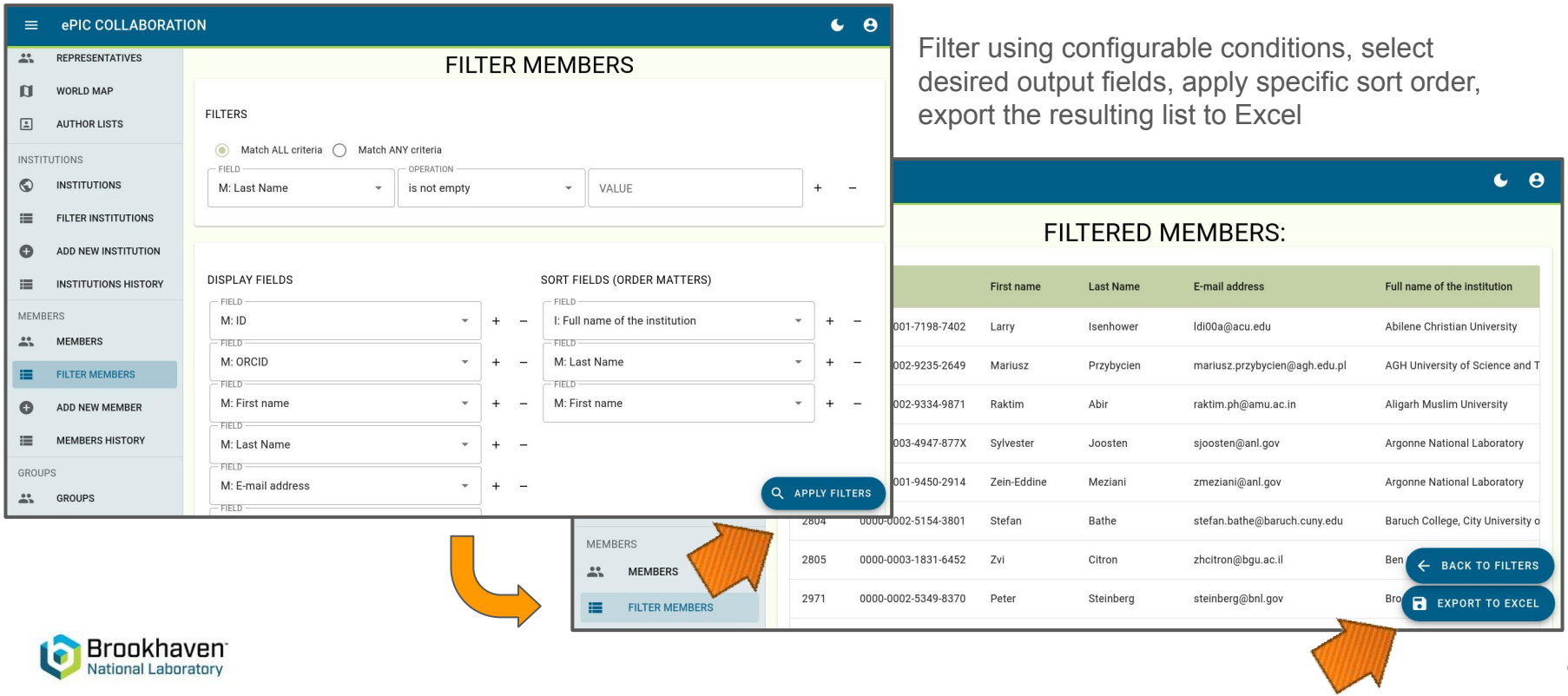
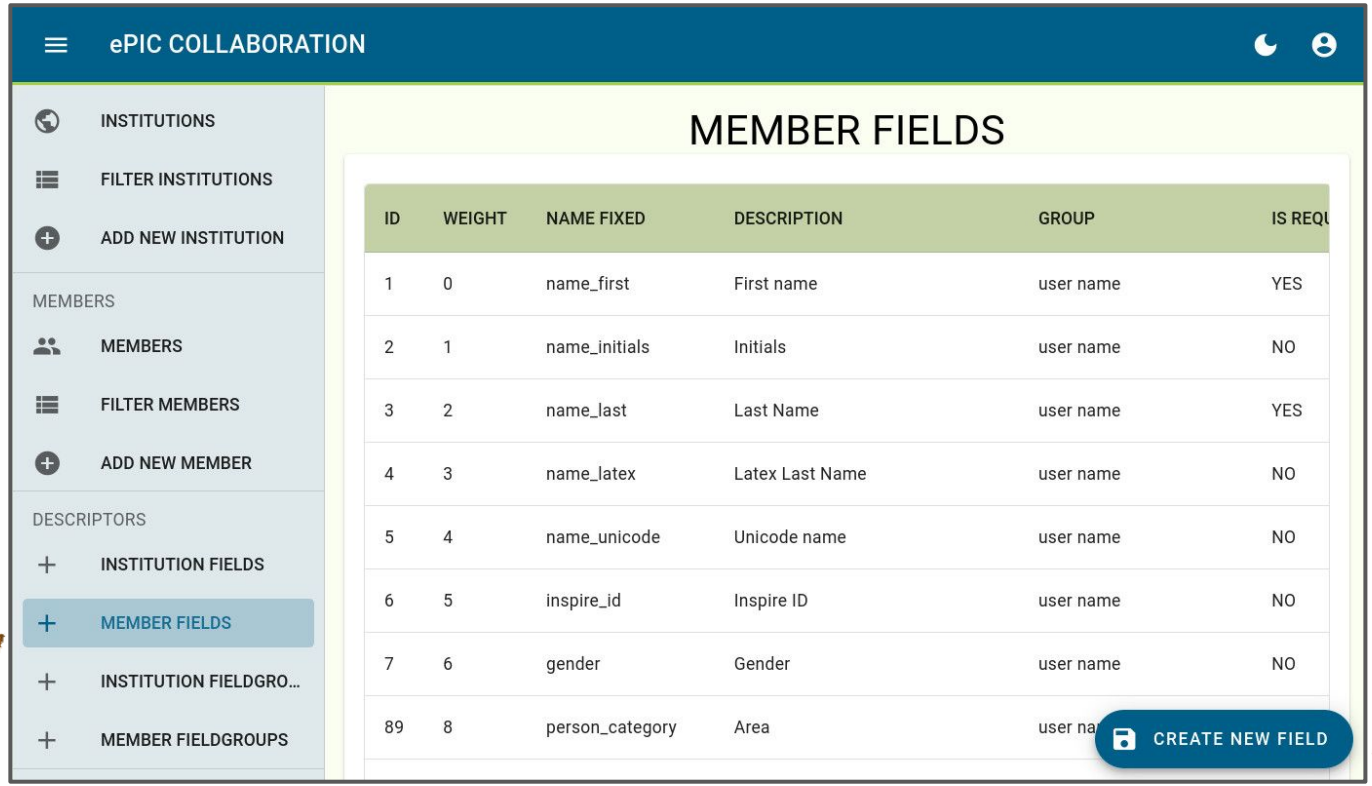
Search, Import/Export to Excel…



Filter using configurable conditions, select desired output fields, apply specific sort order, export the resulting list to Excel

Configurable Entity Fields: add new fields on demand



Entity-Attribute-Value model: no DB schema changes, no downtime

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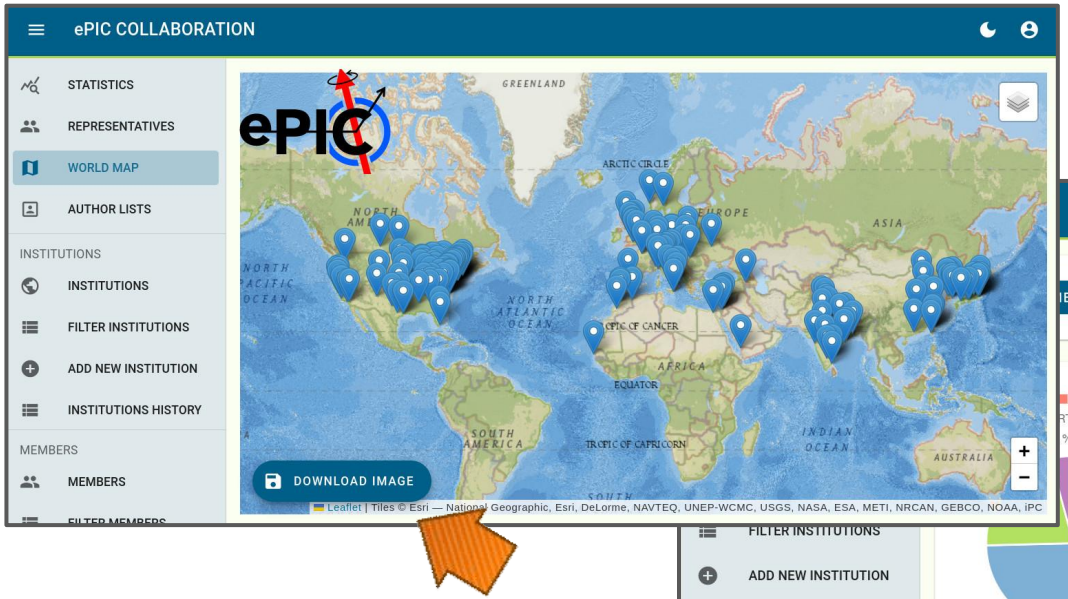
World Map, Statistics…



World Map uses Latitude/Longitude fields defined for Institutions

Statistics graphs: need a list of desired plots from ePIC management. Note: currently presented stats are using ePIC representative data only, as member data is not yet uploaded.

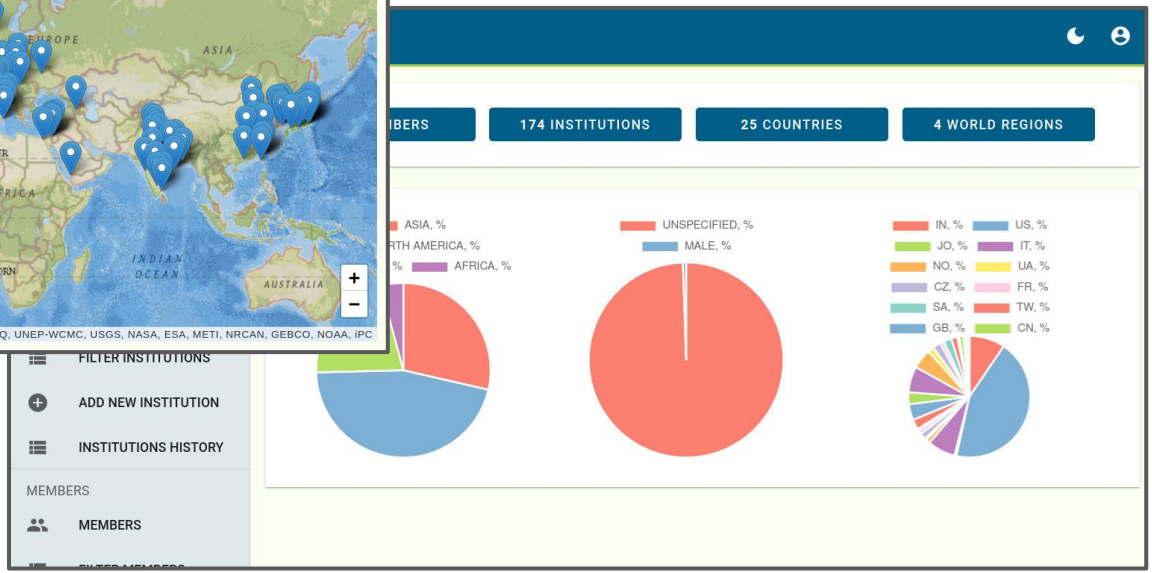


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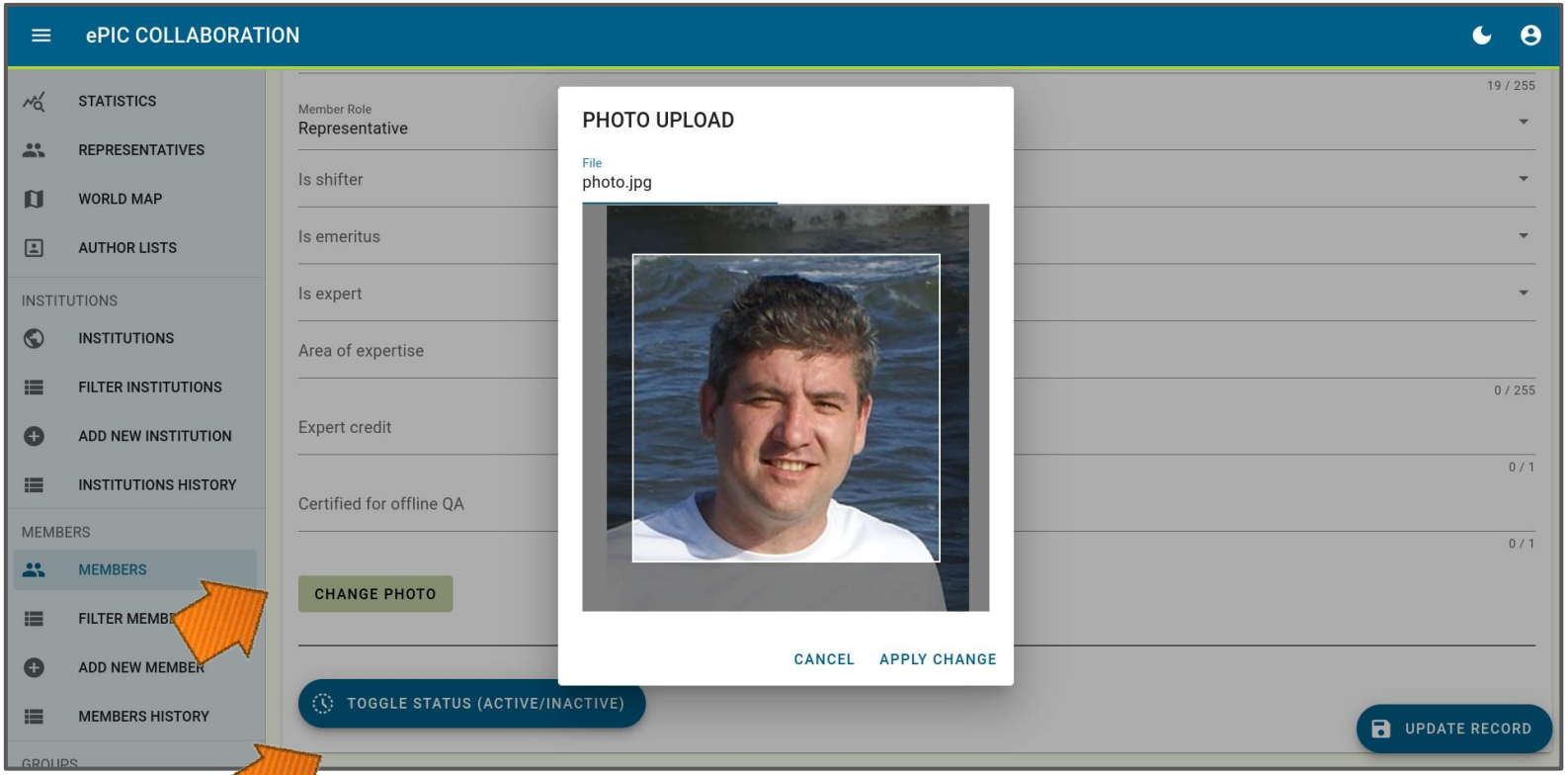
Photo upload, Member/Institution deactivation…



deactivated users can be re-activated by the administrator

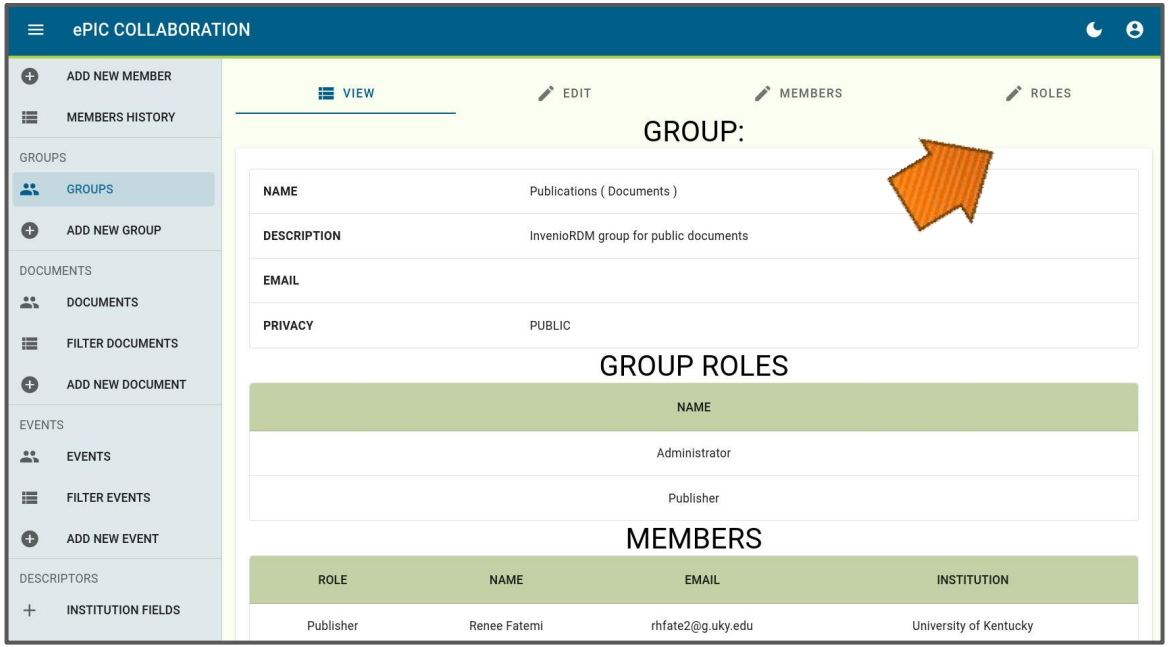
Recently added: Groups

Current implementation:

- Members can now form Groups
- Members could be assigned Roles within Groups
- Groups have the “Category” tag
- (optional) Groups can be made private or public
- (optional) Groups have email - reserved for mailing list integration
- (optional) hierarchy support via “parent group”

Future development:

- Mailing list integration
- Access Control integration
- Document Management Integration



Groups link to Members

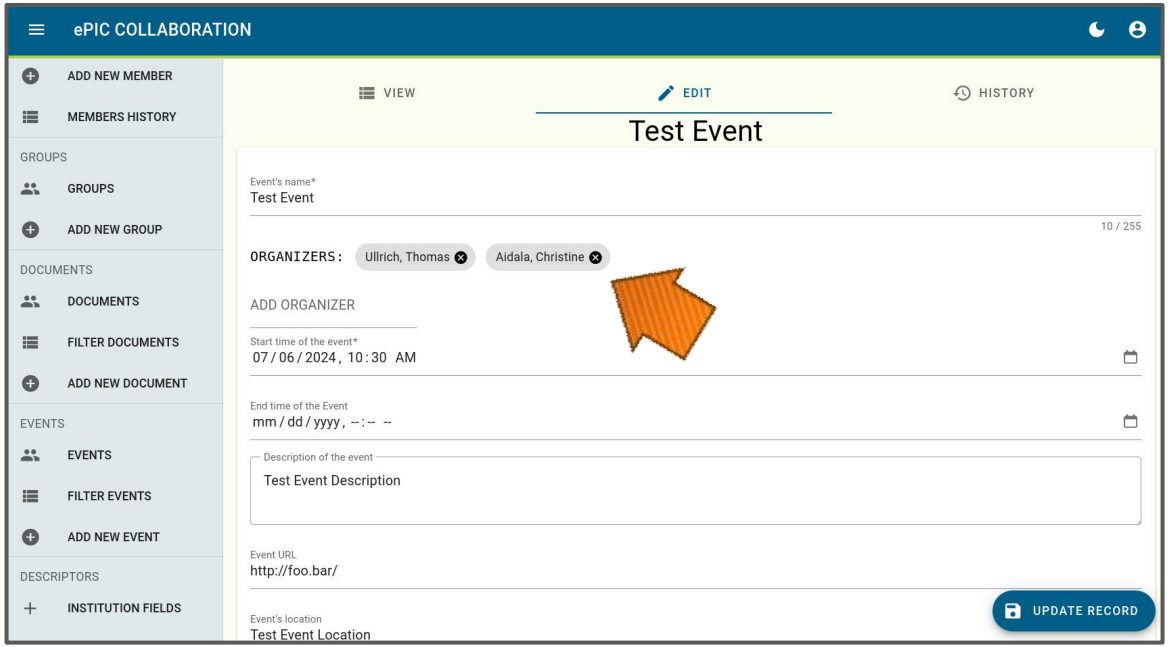
Recently added: Events (meetings/conferences)

Current implementation:

- Members can submit Events
- Events have mandatory fields
  - Title
  - Date (begin/end)
- Events have configurable Optional fields (just like Members, Institutions, etc)
- Events could be referenced by Documents

Future development:

- Event Management System Integration (e.g. with Indico)
- Workflow Management Integration
- Mailing Lists Integration (e.g with Discourse)



Events link to Members

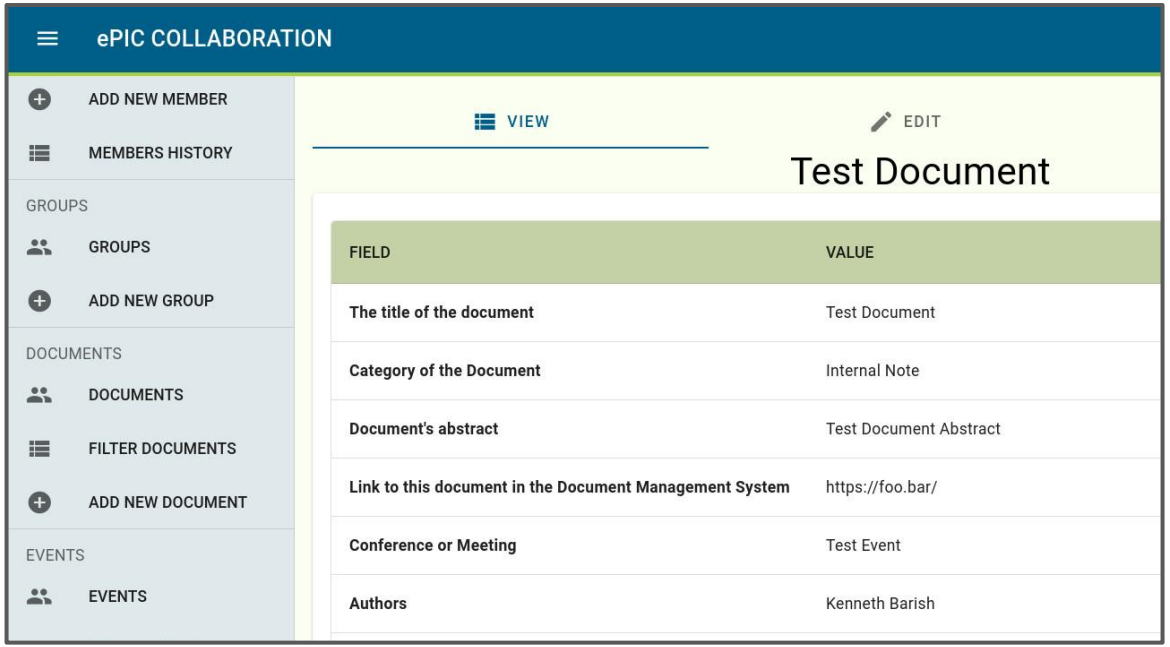
Recently added: Documents

Current implementation:

- Members can submit Documents
- Documents have preconfigured fields:
  - Title
  - Category,
  - Abstract
  - Link to the Document Management System
- Optional fields:
  - Conference (via Events module)
  - Authors / Presenters (via Members module)
- More fields could be added - it is totally configurable!

Future development:

- Workflow Integration



Documents link to Members and Events

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Ongoing Development: User-Centric UI, Workflows

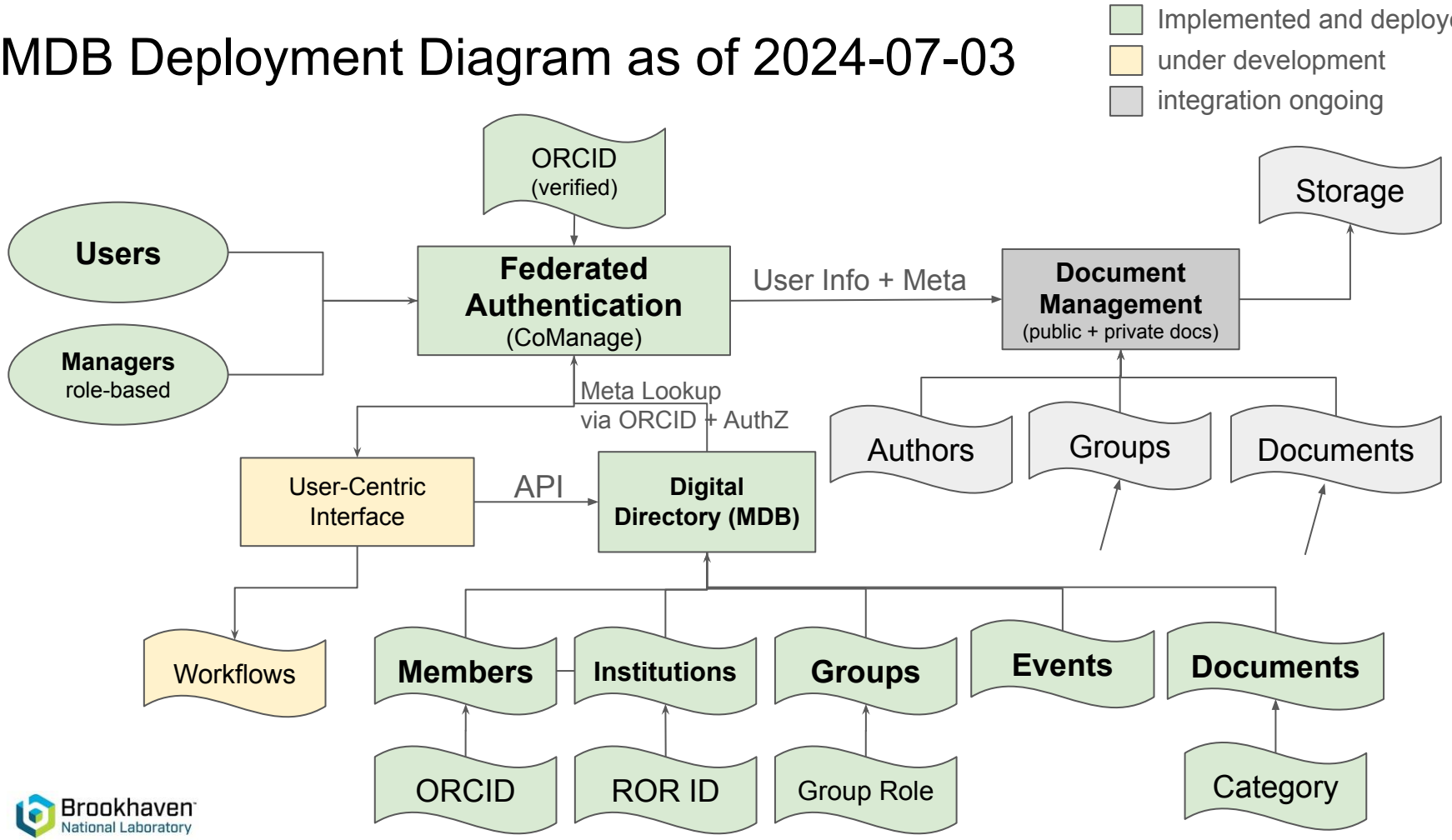
Inspired by Glance project @ CERN

Provides user-centric view into the Digital Directory of the Collaboration
As a member, can I see my institution/co-members/documents/groups/events that reference me or are related to me? What can I do? How do I submit new document, review existing document, join group, submit changes to own profile?

Automates the Document Workflow Management
Workflow engine will handle both internal and public documents related to the experiment. This engine will manage the process of document release, from the draft level to final approval, including the review process (editorial boards, public meetings, etc…). The workflows will vary depending on the type of document, and the engine will be configurable to accommodate the ePIC experiment's structure and other organizational processes. The Workflow Engine will maintain references to external repository (Indico, events)

Estimated development time
1-2 months from today (incl.testing), depending on the provided feedback by ePIC collaboration managers and members (volunteers)

MDB Deployment Diagram as of 2024-07-03



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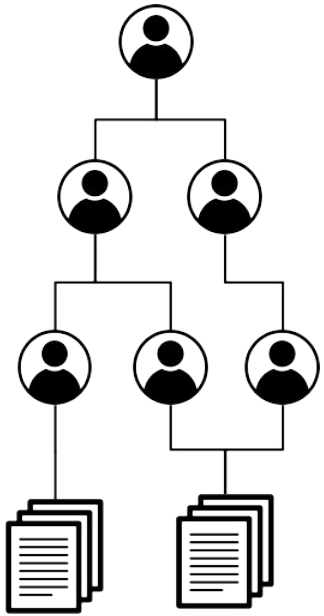
Membership DB for ePIC: Summary and Outlook

- Priorities
  - The ePIC collaboration identified a high-priority need for developing a digital directory accessible through federated identity mechanisms for global collaborators. This directory has been successfully delivered and incorporates essential features for disambiguation, such as identifying institutes through their ROR identity and individuals through their ORCID identifier.
- Readiness Status
  - Membership DB for ePIC is deployed and ready for use https://phonebook.sdcc.bnl.gov/ePIC
  - Modules available today: Members, Institutions, Groups, Documents, Events
  - Need more data from ePIC: full list of Members, list of Groups, etc.
- Federated Authentication
  - Authentication for accessing related web services has been implemented using the CoManage software centralized tool, which is synchronized with the Digital Directory.
    Members can log in using the institution ID, merge accounts from multiple institutions, add ORCID to your CoManage record.
  - CoManage does Membership DB metadata lookups via ORCID match, and exports it to interested services (integration)
- Ongoing/Future development (2024-2025)
  - User-Centric UI: user-related tasks (unlike management tasks of the core MDB)
  - Document Workflows: automate document reviews
  - Integration with external tools: mailing lists (Discourse? Mailman? Sympa?), events (Indico), …